

CLAIMS

What is Claimed is:

- 5 *Sub AI* 1. A method of making a composition comprising melting and blending a poly(vinyl alcohol) and a grafted poly(ethylene oxide).
- 10 2. The method of Claim 1, wherein the grafted poly(ethylene oxide) is a graft copolymer of poly(ethylene oxide) and at least one vinyl monomer.
- 15 3. The method of Claim 1, wherein the grafted poly(ethylene oxide) is a graft copolymer of a homopolymer of poly(ethylene oxide) and at least one polar vinyl monomer.
- 20 4. The method of Claim 1, wherein the grafted poly(ethylene oxide) is a graft copolymer of poly(ethylene oxide) and at least one polar vinyl monomer selected from 2-hydroxyethyl methacrylate, poly(ethylene glycol) methacrylates, poly(ethylene glycol) ethyl ether methacrylates, poly(ethylene glycol) acrylates, poly(ethylene glycol) ethyl ether acrylate, poly(ethylene glycol) methacrylates with terminal hydroxyl groups, acrylic acid, maleic anhydride, itaconic acid, sodium acrylate, 3-hydroxypropyl methacrylate, acrylamide, glycidyl methacrylate, 2-bromoethyl acrylate, carboxyethyl acrylate,
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methacrylic acid, 2-chloroacrylonitrile, 4-chlorophenyl
acrylate, 2-cyanoethyl acrylate, glycidyl acrylate, 4-
nitrophenyl acrylate, pentabromophenyl acrylate,
poly(propylene glycol) methacrylate, poly(propylene glycol)
5 acrylate, 2-propene-1-sulfonic acid and its sodium salt, sulfo
ethyl methacrylate, 3-sulfopropyl methacrylate, and 3-
sulfopropyl acrylate.

10 5. The method of Claim 1, wherein the
poly(ethylene oxide) comprises a graft copolymer of
poly(ethylene oxide) and from about 1 to about 30 weight
percent of a polar vinyl monomer, a polar vinyl oligomer, a
polar vinyl polymer or a combination thereof.

15 6. The method of Claim 1, wherein the
grafted poly(ethylene oxide) comprises a graft copolymer of
poly(ethylene oxide) and a monomer selected from 2-
hydroxyethyl methacrylate, poly(ethylene glycol) methacrylate
and derivatives and analogs of poly(ethylene glycol)
20 methacrylate.

25 7. The method of Claim 1, wherein the
poly(ethylene oxide) comprises a graft copolymer of
poly(ethylene oxide) and 2-hydroxyethyl methacrylate.

8. The method of Claim 1, wherein the grafted poly(ethylene oxide) is a thermoplastic, water-soluble grafted poly(ethylene oxide), and the poly(vinyl alcohol) is a thermoplastic, water-soluble poly(vinyl alcohol).

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9. The method of Claim 1, wherein the melt blend comprises from about 1 weight percent to about 99 weight percent of grafted poly(ethylene oxide) and from about 1 weight percent to about 99 weight percent of poly(vinyl alcohol).

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10. The method of Claim 1, wherein the melt blend comprises from about 10 weight percent to about 90 weight percent of grafted poly(ethylene oxide) and from about 10 weight percent to about 90 weight percent of poly(vinyl alcohol).

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11. The method of Claim 1, wherein the composition comprises from about 10 weight percent to about 50 weight percent of grafted poly(ethylene oxide) and from about 50 weight percent to about 90 weight percent of poly(vinyl alcohol).

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12. A method of making a composition comprising melting and blending a poly(vinyl alcohol), a poly(ethylene oxide), at least one polar vinyl monomer and an initiator under sufficient heat and shear conditions to form a homogenous melt blend of poly(vinyl alcohol) and grafted poly(ethylene oxide).

13. A method of making a film comprising forming a melt blend of a poly(vinyl alcohol), a poly(ethylene oxide), at least one polar vinyl monomer and an initiator under sufficient heat and shear conditions to form a homogenous melt blend of poly(vinyl alcohol) and grafted poly(ethylene oxide); and

forming the blend into a film.

14. A method of making a film comprising extruding poly(vinyl alcohol) and grafted poly(ethylene oxide) in the shape of a film.

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